DRAFT ENVIRONMENTAL ASSESSMENT FOR CROSSTIMBERS PROJECT AT SKIATOOK LAKE, OKLAHOMA

Project Proponent:

Skiatook Economic Development Authority
Skiatook, Oklahoma

Prepared for:

U.S. ARMY CORPS OF ENGINEERS
TULSA DISTRICT
TULSA, OKLAHOMA

Prepared By:

ALEXANDER CONSULTING, INC.
5802 S. 129th East Avenue
Tulsa, Oklahoma 74134

DRAFT

FINDING OF NO SIGNIFICANT IMPACT

In accordance with the National Environmental Policy Act (NEPA) of 1969, including guidelines in 33 Code of Federal Regulations, Part 230, the Tulsa District of the U.S. Army Corps of Engineers (USACE) has assessed the environmental impacts of the construction of the CrossTimbers Project at Skiatook Lake, Osage County, Oklahoma. The CrossTimbers Project would construct a golf course, marina and boat service, RV sites and cabins, and a village (consisting of a lodge, cabins, store, and other related facilities) on federal lands in portions of Sections 26, 27, and 35, T22N R11E and Sections 2, 3, 9, and 10, T21N R11E in Osage County, Oklahoma. A request from the Skiatook Economic Development Authority (SEDA) for a lease of 550 acres of federal lands at Skiatook Lake to allow construction of the proposed project has necessitated compliance with NEPA.

As proposed, the golf course would be located at Skiatook Point on Skiatook Lake. The course would be built on approximately 300 acres of federal land located north and west of Skiatook Dam. The proposed RV park and cabins would be located at Tall Chief Cove campground adjacent to existing camping sites on the west end of the campground. The proposed village would also be located at Tall Chief Cove, adjacent to the swimming beach and boat launch at the southern end of the campground. The proposed marina and related facilities would be located at Tornado Cove. Proposed nature trails would be located from Tornado Cove north to Skiatook Dam.

The environmental review of the proposed project, which is documented by the enclosed Environmental Assessment and incorporated herein, indicates that no significant adverse environmental impacts on the natural and human environments would result from the proposed project. Therefore, an Environmental Impact Statement is not required.

_____
Date

Robert L. Suthard, Jr.
Colonel, U.S. Army
District Engineer

Enclosure:
Environmental Assessment

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I. PURPOSE, NEED AND SCOPE

The purpose of this Environmental Assessment is to assess the environmental impacts from the proposed construction of a golf course, marina and boat service, RV sites and cabins, and a village (the village would consist of lodge, cabins, store, and other related facilities) on Federal lands at Skiatook Lake in Osage County, Oklahoma (Figures 1 - 5). Although the Final Environmental Impact Statement for Skiatook Lake, dated 1972, addresses authorized recreational purposes at this location, significant excavation and changes in the land would result from construction, thus requiring preparation of an Environmental Assessment to assure compliance with the National Environmental Policy Act of 1969, as amended.

Skiatook Reservoir was authorized for construction by the Flood Control Act approved 23 October 1962 (Public Law 87-874, 87th Congress, H.R. 13273) in accordance with the plan outlined in House Document No. 564 (87th Congress, 2nd Session). Purposes of the Skiatook project included flood control, water quality control, water supply, recreation, and fish and wildlife.

The proposed project is located in portions of Sections 26, 27 and 35 of Township 22 North, Range 11 East and Sections 2,3,9 and 10 of Township 21 North, Range 11 East in Osage County, Oklahoma. Access to the site is via State Highway 20 and paved county roads to the project boundaries from the east. North 52 West Avenue and State Highway 11 provide access to the western side of the lake via West 103rd Street. Within the project boundary, access is via government and county roads (Figures 1 through 5).

The project includes the development of a golf course, marina and boat service, RV sites and cabins, and village (the village would consist of lodge, cabins, store, and other related facilities). See site development map, Appendix B

The U.S. Army Corps of Engineers (USACE) currently operates the campgrounds at Skiatook Lake. The Tall Chief Cove camping facility has led USACE Southwest Division campgrounds in revenue for the past three years and experiences 100 percent utilization on the weekends during the camping season (having to turn away campers). A marina leased to the Public Works Authority of Osage County and subleased to a private company, is currently in operation at the lake. The marina is very busy during the summer season with a 90 percent utilization rate.

A description of each proposed activity is provided in Appendix B

II. ALTERNATIVES INCLUDING PROPOSED ACTION

A. No Action

This alternative would retain existing conditions and would not result in any project related environmental impacts or loses to fish and wildlife habitat. Existing facilities would remain,

resulting in a continued shortage of camping facilities and recreational space at Skiatook Lake.

B. Construct Golf Course, Marina, RV Sites and Cabins, Village, and Expand Existing Camp and Recreational Facilities at Tall Chief Cove (Proposed Action)

1. This alternative would provide a high quality, modified "target golf course", a marina, expanded RV sites, cabins, and a village (the village would consist of lodge, cabins, store, and other related facilities). The "target golf course" concept of golf course development minimizes the disturbance to native vegetation and natural topography by strategically placing course features within the existing landscape. Golf holes, fairways and other features would be framed by existing trees/shrubs, native grasses, hills, and drainages, thereby minimizing excavation and maintenance of extensive tracts of improved turf. Other project construction would also be accomplished with this concept in mind, and would provide a needed increase in camping and recreation areas. Buildings would be constructed in concert with the local environment not at the price of the local environment. All of the proposed facilities would be public facilities.

III. AFFECTED ENVIRONMENT

A. Location

The proposed golf course would be located at Skiatook Point. The course would be built on approximately 300 acres of USACE land located north and west of the dam (Figure 2). The proposed RV park and rustic cabins would be located at Tall Chief Cove Campground adjacent to the existing camping sites on the west end of the campground. The proposed Village is also located at Tall Chief Cove (Figure 5). It would be on the southern end of the campground adjacent to the swimming beach and boat launch. The proposed marina and related facilities would be located at Tornado Cove (to the northeast of Tall Chief Cove) (Figure 4). The proposed nature trials would be located from Tornado Cove north to the dam area (Figure 3).

B. Climate

Skiatook Lake lies in a region characterized by moderate winters and comparatively long summers with relatively high temperatures. The summer rains usually occur as thunderstorms of short duration and limited extent but with intense rainfall. The winter rains are generally of low intensities but cover large areas and are several days in duration. Normal annual precipitation over the watershed is about 37.1 inches. May is normally the wettest month and December the driest; however major storms may occur at any time during the year. Nearly two-thirds of the precipitation occurs during the growing season, April through September. Annual snowfall averages around 8.9 inches per year.

The mean temperature for the area is around 60°F with record extremes ranging from a minus 26°F to a plus 118°F.

The Hominy Creek watershed is in an area of prevailing southerly winds. Greatest wind movements occur in the spring months. A study of available wind velocity data indicates that 45 miles per hour is the highest wind velocity that can be reasonably expected for the duration of one hour or more (Oklahoma Climatological Survey).

C. Social and Economic Conditions

1. Study Area. Osage County is in the extreme north-central Oklahoma and is bordered to the north by the Kansas state boundary line and to the south by the Tulsa metropolitan area. Skiatook Lake is located in the southeastern portion of the county. The lake is operated by the U.S. Army Corps of Engineers. The Tall Chief Cove camping facilities are used at a 100% rate on weekends (turning away a number of individuals during the season). The existing marina is also operated at approximately 90% capacity during the boating season (May through September).

2. Population. The population of Osage County is 44, 437 as of the 2000 census. Skiatook area has seen a growth rate of approximately 10% over the last 10 years.

3. Employment and Income. The economy is primarily based on horse and cattle ranching as well as oil and gas production. Unemployment rate in the county was 4.0% in 2001 compared to 4.3% for the State. The 1999 per capita income for Osage County was $17, 634 compared to $22,958 per capita for the State.

4. Social Ecology. Land use in the Skiatook Lake area is mainly ranching, although recent years have seen the slow encroachment of housing developments west of the town of Skiatook and on the eastern end of the Lake. Upscale housing has been built on private property on both sides of the northern end of the Lake. Lake view houses start at 160,000 dollars in the Catalina Cove subdivision east of Tornado Cove. Homes on East Ridge sell in excess of 230,000 dollars. Westside homes in the Santa Barbara subdivision start at 180,000 dollars, with homes selling in excess of a million dollars in the Beverly Hills subdivision. The median price for a home in the Skiatook area is 63,176 dollars with the average price of a home being 69,601. Only 3.3 % of homes with a ten-mile radius of the Town of Skiatook sell for more than 150,000 dollars (Town of Skiatook Market Profile Report June 15, 2001).

The standard of living on the eastern end of the lake has shown a dramatic shift in the past five to ten years. The increase in housing prices has brought an increase in the amount of land that is being made available for development.

5. Environmental Justice. Executive Order 12898 requires federal agencies to identify and address disproportionately high and adverse human health and environmental effects of federal programs, policies, and activities on minority and low-income populations. Federal agencies are directed to ensure that federal programs or activities do not result, either directly or indirectly, in discrimination on the basis of race, color or national origin. Federal agencies are required to provide opportunities for input in the NEPA process from affected

communities and to evaluate significant and adverse environmental effects proposed federal actions on minority or low-income communities during the preparation of federal environmental documents. The proposed project was evaluated in accordance with E.O. 12898.

6. Protection of Children from Environmental Risks and Safety Risks. Executive Order 13045 requires federal agencies shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children. Federal agencies are directed to ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health and safety risks. The proposed project was evaluated in accordance with E.O. 13045.

D. Natural Resources

1. Terrestrial. Skiatook Lake is located in the Eastern Cuesta plains subdivision of the Interior Lowlands physiographic (Bailey 1995). The, physiographic location is the Interior Plains Division, Central Lowland province (Bailey 1995). The Central Lowland is further divided into: Dissect Till Plains, Osage Plains, Chautauqua Hills and the Flint Hills. Only the Chautauqua Hills and Osage Plains subdivisions are geographically related to the Skiatook Lake area. These subdivisions are further divided into area by soil and vegetative types: cross timbers (upland woods), elm-ash-cottonwood (bottomland) associations, and bluestem (tall grass) prairies.

The project area is primarily composed of cross timbers (upland woods). These forests exist in continuous to scattered stands on sandstone of the Douglas group throughout the Chautauqua Hills. In these areas post oak and blackjack oak, and others grow on rocky land where water is received from sandstone surfaces and snow lodges during the winter.

Prior to impoundment the project areas were mainly upland timberland and native grassland. Since impoundment, the areas have been managed as public use areas for camping and other recreational activities. There are no bottomland hardwoods or wetland resources within the scope of the proposed project.

2. Soils. Although several different soil types are present, the predominant soil type in the proposed development area is the Niotaze-Darnell complex. The Niotaze-Darnell complex consists of small areas of Niotaze and Darnell soils that are so intermingled that distinct separation was not possible at the scale selected for mapping purposes. The Niotaze-Darnell soil complex, which forms on the crests and side slopes of uplands, range from moderately deep (Niotaze) to thin (Darnell), somewhat poorly drained (Niotaze) to well drained (Darnell), and are very gently sloping (3%) through moderately steep (25%) in slope.

The Niotaze soils make up about 65% of the mapped acreage. In typical Niotaze soils, the surface layer to a depth of about 3 inches consists of very dark grayish brown silt loam that grades at that depth to a brown silt loam to 6 inches. The upper part of the subsoil is reddish brown silty clay to a depth of 15 inches. The middle part is mottled in shades of red, brown,

and olive silty clay to a depth of 28 inches. The lower part is olive silty clay to a depth of 36 inches. The underlying material of Niotaze soils is shale bedrock. The permeability of the Niotaze soil is slow and available water capacity is medium.

The Darnell soils make up about 15 to 35% of the mapped acreage. In typical Darnell soils, the surface layer to a depth of about 4 inches consists of very dark grayish brown fine sandy loam. The thin subsoil consists of a brown fine sandy loam to an average depth of 13 inches. The underlying material of Darnell soils is sandstone bedrock. The permeability of the Darnell soil is moderately rapid and available water capacity is low.

The Niotaze-Darnell soil complex is used mostly for range, but is also well suited for the growth of native trees (scrub oaks, blackjacks, etc) that are useful as firewood and posts. The smoother, less stony areas are also suited to tame pasture grasses.

3. Prime Farmland. As defined by the U.S. Natural Resources Conservation Service there are no Prime and Unique Farmlands within the scope of this project. Letter from the U.S. Natural Resources Conservation Service is in Appendix B.

4. Wild and Scenic Rivers. No body of water in the Lake Skiatook watershed is a federally designated Wild or Scenic River.

5. Wetlands. The only wetland within the scope of the proposed project is a small fishing pond located in the Skiatook Point area. A fishing pond would be incorporated into the golf course design. See the United States Department of the Interior, National Wetland Inventory (NWI) map, located in Appendix B.

6. Wildlife. The Oklahoma Department of Wildlife Management (ODWC) administers the Skiatook Wildlife Management area on the western end of Skiatook Lake. The ODWC manages 5085 acres of property (both land and water) around the area where Hominy Creek flows into the lake. This area contains 3600 acres of upland woods (cross timbers subdivision) and is open to the public for hunting.

A large variety of rodents, reptiles, amphibians, and birds are plentiful throughout the region. A comprehensive list of all flora and fauna is available in the Final Environmental Impact Statement for Lake Skiatook (USACE 1972).

a. Fish. Lake Skiatook has an excellent reputation as a prime fishing area. The primary sport fish are largemouth bass, spotted bass, smallmouth bass, white crappie, white bass, walleye, channel catfish, blue catfish, flathead catfish, and white bass/striped bass hybrid (Oklahoma Department of Wildlife Conservation 2002). Sport fish have been stocked yearly in the lake since 1987 with hybrid bass being stocked in the greatest number in recent years.

Stresses on the aquatic ecosystem at Lake Skiatook include anoxic summer conditions, and lake level fluctuations. (Oklahoma Department of Wildlife Conservation, 2002).

Species found in Skiatook Lake are typical of the cross timbers area and include such species as bass, white crappie, walleye, catfish, carp, bullhead, and bluegill.

b. Amphibians and Reptiles. Species found are typical of the cross timbers area and include such species as terrestrial and aquatic snakes, turtles, lizards, skinks, frog, toads and salamanders.

c. Birds. Species found are typical of the cross timbers area and include such species as harriers, hawks, doves, kingfishers, woodpeckers, chickadees, titmouse, mocking birds, eastern bluebird, loggerhead shrike, starling, blue jay, crow, sparrows, eastern meadowlark, crackle, cowbird, cardinal, junco and scissor-tailed flycatcher.

d. Mammals. Species found are typical of the cross timbers area and include such species as white-tailed deer, rabbits, squirrels, coyote, raccoon, bobcat, possum, wood chuck, ground hog, foxes, muskrat, skunk, mink, bats and beaver.

E. Cultural Resources

The project area is situated in a zone of low oak-covered hills, which form the boundary between the grasslands of the Plains to the west and the oak-hickory forests to the east. The project area lies at an elevation between 714 and 850 feet U.S. Geological Survey topographic data. The uppermost sediments are composed principally of dark gray silty clays and clay loams related to the Ferris-Tarrant-Heiden Association. The sediments tend to be rocky and thin over much of the area, with some outcrops of limestone and/or sandstone.

As an area of research, the project area falls within the Southern Great Plains archeological province. A cultural-historic overview of the surrounding region is beyond the scope of this report; however, a detailed account is given in various U.S. Corps of Army Engineers publications. Most notable of these publications are: The Archeology of the Proposed Skiatook Reservoir, Osage County, Oklahoma (Rohrbaugh and Wycoff 1969), An Historical-Cultural Assessment of the Skiatook Reservoir, Osage County, Oklahoma (Perino 1972), and The Prehistory and Paleoenvironment of Hominy Creek Valley 1978 and 1979 field seasons (Henry 1978 and 1982).

F. Threatened and Endangered Species

The interior least tern, whooping crane, bald eagle, piping plover, mountain plover, and neosho mucket have been listed by the U.S. Fish and Wildlife Service as Federally listed threatened, endangered, or candidate species that may occur in the project area (Appendix A).

G. Water Quality

USACE has characterized the general water quality at Skiatook Lake as having macronutrients and trace metals at levels and patterns not a cause for alarm but that do

warrant future study (USACE 1998). Phosphorus is at levels high enough to consider the lake mesotrophic. Mesotrophic lakes show some depletion of oxygen making them not always suitable for coldwater fisheries, although productivity is good. Shifting land use patterns in the water shed could shift the entire lake into a higher trophic level (Eutrophic). Eutrophic lakes show a reduction in aesthetics due to turbidity, but generally are very productive for warm water fisheries. The second area of awareness is in the trace metals. Mercury levels were above detection limits in five surface water samples. This survey provided water quality baseline data for Skiatook Lake with samples taken between April and November 1994.

Since that time, the Oklahoma Water Resources Board (OWRB) has measured water quality in Skiatook Lake. Data gathered in 1996, 1999 and 2000 show that Skiatook Lake is still classified as mesotrophic, bordering on eutrophic. A mesotrophic to eutrophic lake is one that is indicative of moderate to high primary productivity and intermediate nutrient levels. According to the ODEQ, Skiatook Lake was sampled in 1998 and none of the fish samples exceeded screening level or low consumption advisory level for metals toxicity.

H. Air Quality

The U.S. Environmental Protection Agency (USEPA) published a Conformity Rule on 30 November 1993, requiring all Federal actions to conform to appropriate State Implementation Plans which were established to improve ambient air quality. At this time, the Conformity Rule only applies to Federal actions in non-attainment areas. A non-attainment area is an area which does not meet one or more of the National Air Quality Standards for the criteria pollutants designated in the Clean Air Act (CAA).

To comply with this rule, a conformity determination based on air emission analysis in required for each proposed Federal action with a non-attainment area. This geographical region is in attainment and meets the National Air Quality Standards for the criteria pollutants designated in the CAA. Consequently, a conformity determination is not required.

I. Noise. Noise levels in the project area are consistent with an area that is experiencing a growth in population levels. Various housing areas are in the process of development and construction in the proposed project area. To the north of the Skiatook Point (proposed golf course) a variety of housing areas are in currently being built. The area to the south of Tornado Cove (proposed marina) has been cleared and multiple houses are being built. The land south of Tall Chief Cove Camp ground is currently being developed for single resident housing.

IV. ENVIRONMENTAL IMPACTS OF THE PROPOSED ACTION

A. SOCIAL AND ECONOMIC IMPACTS

1. Future Without Project Conditions

a. Population. Under without-project conditions, population trends of the past decade would continue. Recreational use is expected to grow along with the population.

b. Employment and Income. The unemployment rate is expected to remain slightly lower than the state level. Ranching would remain the important part of the local economy, but the local economy will become less labor intensive. The income level of persons living in Osage County is expected to stay well below the income level of persons living in other parts of Oklahoma.

c. Social Ecology. Building of upscale homes and subdivisions would continue on the eastern end of the lake. Living standards would continue to rise as development increase in the general area.

2. FUTURE WITH PROJECT CONDITIONS

a. Population. The project should not have a direct impact on the number of people living in Osage County. The project would have a direct impact on those using the Skiatook Lake facilities. Population trends of the past decade should continue. Construction may temporarily increase noise and traffic. Specifically, traffic patterns on Lake Road may be temporarily disrupted due to construction. Construction of the golf course, marina, convention facility, and campground would increase recreational opportunities for the local population as well as for those persons living in other locales. The new facilities should generate additional visitation to the Skiatook Lake area.

b. Employment and Income. Projected construction would increase job opportunities in the area. When all phases of the project are in operation approximately 50–60 new jobs would be created, making the CrossTimbers one of the major employers in the local area. In the long-term unemployment rate should remain slightly lower than the state. Construction related expenditures should increase local income. Income for local residents should remain slightly lower than in other more urbanized areas of Oklahoma.

c. Social Ecology. The project would fit in with the local development. The eastern end of Skiatook Lake has seen an increase in housing development in the last five to ten years. Rural Water District 15 (RWD 15) reports that 325 new houses were built in this area in the last five years

Water to the proposed project would come from RWD 15, which receives its water from the town of Skiatook. The town of Skiatook does not have enough storage from Skiatook Lake to meet the proposed demands. The RWD 15 has a 2000 acre-foot future use water storage contract at Skiatook Lake. This storage is from the originally authorized water supply storage. As the proposed project is developed, RWD 15 would activate the water storage contract from future use to a present use status. The town of Skiatook would treat water from RWD 15's storage to insure the demands for the phased development of the proposed project are met. The town of Skiatook is expanding the water plant to meet future needs of the Skiatook area. Water to irrigate the golf course would be bought from the town of Skiatook.

Sewage treatment would be on site. A variety of methods for sewage disposal, such as aerobic systems and wetland systems, are being investigated. Systems that are used would comply with all applicable state and federal laws and regulations regarding wastewater treatment.

Traffic flow to the area would come from the North on SH 10 either via Lake Road or via Rogers Blvd and from the South via W. 103rd St. to Lake Road (Figure 1). This is the normal traffic pattern today. Noise in the area is expected to increase during construction and then to be consistent with the project activities.

The aesthetics of the proposed development are of utmost importance. The proposed CrossTimbers project is being built to fit in with its surroundings, with existing facilities in Oklahoma and Missouri being used as templates for project design. The standard of living would also benefit with the proposed development through an increase in employment and land values.

d. Environmental Justice. In accordance with Presidential Executive Order 12898, a review of this project was evaluated in terms of its effect of excluding persons (including populations) from participating in; denying persons (including populations) the benefits of; or subjecting persons (including populations) to discrimination because of their race, color, or national origin. The review indicates that no such effects would result from the project.

e. Protection of Children from Environmental Health Risks and Safety Risks. In accordance with Presidential Executive Order 13045, a review of this project was evaluated in terms of any health risks and safety risks that may disproportionately affect children. The review indicates that no such effects would result from the project.

B. NATURAL RESOURCES IMPACTS.

1. Terrestrial. Temporary disturbance to soils and existing vegetation would occur from construction activities (i.e., shaping, excavation, and sodding with turf). Approximately 150 acres would be used for construction of the golf course, 30-40 acres for the Village, 5 acres for the Marina, and 20-30 acres for the camping/RV park extension with modest additional development occurring within the balance of the project area for nature trails and other facilities as suggested by the development plan. About one third this area is open and the other two thirds is timbered (see Wildlife Habitat Type for the Proposed Project, Table 1). Losses to existing hardwoods within the designated construction areas should be minimal. Disturbance to shoreline riparian and timber habitats should be minimal or non-existent, as these habitats would be left in place to provide an aesthetic buffer zone and to minimize maintenance. Disturbance to and conversion of existing cross timbers vegetation would occur for construction of the marina, golf course and village.

TABLE 1

Wildlife Habitat Type for Proposed Project

	Prairie	Interspersed Forest	Forest edge	Closed Canopy Forest	Riparian	Aquatic	Total
Golf Course	45 acres (30%)	0 acres	15 acres (10%)	90 acres (60%)	0 acres	0 acres	150 acres (58%)
Marina	0 acres	0 acres	0 acres	3 acres (8%)	2 acres (5%)	30 Acres (86%)	35 acres (13%)
Village	8 acres (20%)	0 acres	2 acres (5%)	30 acres (75%)	0 acres	0 acres	40 acres (15%)
RV/Camping	18 acres (60%)	10.5 acres (35%)	1.5 acres (5%)	0 acres	0 acres	0 acres	30 acres (12%)
Hiking Trail	0 acres	0 acres	0 acres	5 Acres (100%)	0 acres	0 acres	5 acres (2%)
Total	71 acres (27%)	10.5acres (4%)	18.5 acres (7%)	128 acres (50%)	2 acres (1%)	30 acres (11%)	260 acres (100%)

There is a possibility that old growth trees exist in the project area. The project would make best efforts to preserve these trees where they are known to exist. Tree experts would be consulted during the construction phases to identify old growth trees and these trees would be protected whenever possible.

2. <u>Prime and Unique Farmlands.</u> As defined by the U.S. Natural Resources Conservation Service there are no Prime and Unique Farmlands within the scope of this project.

3. <u>Aquatic and Wetlands.</u> Nutrient loading from fertilization applications and contamination from pesticides use at the golf course would be minimal due to efforts taken to maximize the integration of existing undeveloped lands into the project design. A detailed turf management and Integrated Pest Management Plan would be used to properly apply fertilizers, herbicides and pesticides (see golf course design guidelines in Appendix B). A buffer of existing shoreline habitats, composed of cross timbers, riparian species, natural plants and grasses to maintained areas (bermuda grass) should be ideal for natural assimilation and/or decomposition of possible pollutants. The cross timber trees, shrubs, and grasses should also serve as indicators of excessive herbicide application because of their sensitivity to contamination. At the Marina, proper operation and maintenance of equipment and strict adherence to state and federal regulations would help maintain the water quality of the lake.

Proper construction and operation of the proposed golf course, marina and village facility, as designed, would not impact existing aquatic resources.

4. Fish and Wildlife. The construction of a "target golf course" may benefit some wildlife species and adversely impact others. Foraging species may benefit from increased food availability provided by clearing of the underbrush. However, neotropical bird species that utilize the cross timbers would be adversely impacted. In coordination with USACE and USFWS, bird and small mammal habitat would be added where possible throughout the project. As with any construction project, some species would be displaced. Also, a variety of wetland areas would be added in the construction of the golf course (see golf course design guidelines section of Appendix B).

Loss of habitat would be held to a minimum in all areas of development. Fish habitat, approximately 20-30 acres, which would be removed in the construction of the marina, would be added in other areas of the lake as directed by a plan developed in association with the U.S. Army Corps of Engineers, U.S. Fish and Wildlife Service, and the Oklahoma Department of Wildlife Conservation. Other construction is proposed within the heavily used Tall Chief Cove campground area, where wildlife has either moved or adapted to human occupancy.

5. Threatened And Endangered Species. This project would not impact Federally-listed or State-listed species. The USFWS list four threatened or endangered species, one proposed threatened species, and one candidate species in Osage County. USACE rangers noted all of the threatened and endangered species were occasional visitors to the Skiatook Lake area, but there is no critical habitat for them in the proposed project area. Information regarding surveys for Federally listed species is in Appendix A.

6. Wetlands And Water Quality Permits. No existing wetlands as identified by the USFWS (NWI) would be negatively impacted by the project. Additional wetlands would be constructed as part of the golf course project. All permanently inhabitable building would be in an area outside of the 50-year flood plain. A National Flood Insurance Program Map (Federal Emergency Management Agency) is in Appendix B.

7. Cultural Resources. A cultural resources survey of the proposed project area was conducted by Dr. Donald Henry of the University of Tulsa in May 2002. No archeological sites were recorded during this survey. One traditional cultural property, call Tepee Rock or Healing Rock, was identified near the current USACE office and within the area proposed for construction of the golf course. This traditional cultural property will not be physically disturbed by the construction of the golf course and will remain accessible for visitation once the golf course is constructed. Consultation with the Quapaw, Osage, Kiowa, Comanche, and Wichita and Affiliated Tribes have not revealed any concerns regarding the lease or the proposed development within the project area. Information regarding the cultural resources inventory and coordination in accordance with the National Historic Preservation Act are contained in Appendix C.

8. **Water Quality.** The golf course project is designed to minimize overall maintenance of the facility, including application of fertilizers and pesticides that are often problematic to optimum water quality. The project design integrates existing natural features and vegetation of the local area with the layout of fairway, greens, and roughs, thereby reducing the need for frequent or high level maintenance. Construction features such as gravel sumps, swales, man-made wetlands and settling basins would be built to control drainage on the golf course. A turf management plan and Integrated Pest Management Plan would be used to control the amount and types of possible pollutants (see golf course design guidelines Appendix B). Additionally, existing shoreline vegetation, composed primarily of cross timber trees, native plants, and grasses would be left in place as a buffer between the golf course and the lake. Buffer areas between the maintained turf of the golf course and the rocky shore line will vary in width, but will typically be no less than 100 feet wide, and in most areas be significantly wider. These areas will be preserved in their existing condition. Practical safety design guidelines dictate that golf and other land uses such as jogging paths or picnic areas are incompatible. Except for golfers searching for errant golf balls, pedestrian access into these buffer areas will typically not occur. Buffer areas will receive "best management practices" to maintain healthy conditions of vegetation. Coordination between the golf course and the Natural Resources Conservation Service will take place during the golf course design and construction phases to develop a proactive approach for buffer maintenance.

The marina is designed to minimize impacts to lake water quality. Strict adherence to state and federal regulations coupled with proper maintenance and material-handling procedures should ensure a minimum impact to water quality from marina operations. The marina management plan would contain procedures and instructions for safe guarding the lake water quality (see marina environmental features sheet in Appendix B). The possible restriction of only allowing boats with 4-stroke motors to lease space at the marina is being investigated.

9. Air Quality. Conformity to the 1993 Conformity Rule (USEPA) for ambient air quality is not necessary because no foreseeable emissions from activities of this proposed project would result in a non-attainment area. Skiatook Lake is not located in a non-attainment area as described by the Clean Air Amendments of 1990, the USEPA, or the U.S. Army Environmental Hygiene Agency (USAEHA 1990).

10. Noise. Construction of the proposed golf course, RV park, marina, and village would result in the temporary increase in noise levels in the project area. The types of construction equipment that would likely be used in the project area (e.g., tractor, loader, or backhoe) would generate noise levels of 80-90 dBA at a distance of 50 feet (Jones & Stokes 1998). The operation of construction equipment can vary from intermittent to fairly continuous and many pieces of equipment can operate at the same time. Assuming a bulldozer (87 dBA), backhoe (90 dBA0, and front-end loader (82 dBA) are operating simultaneously in the same area, peak construction-period noise could be approximately 94 dBA at 50 feet for the construction sites (Jones & Stokes 1998).

Although construction-related noise levels could occur in the construction areas of the project during the initial construction period of up to 2 years, these effects are considered relatively

minor for the following reasons: construction noise effects would be temporary, the period of most intense construction activity would occur in a relatively short period of time (several months) for golf course layout that is near to any residence, and most construction would occur in areas that are not sensitive to noise.

C. CUMULATIVE EFFECTS.

The cumulative effects from construction of the projects are loss of natural habitat. Approximately 150 acres for the golf course would be placed under planned maintenance. All of this, except approximately 6.5 acres, would be covered in a variety of plants and grasses. Native species of plants and grasses would be used when practical.

The marina would use approximately 20-30 acres of water and 5 acres of land. The village and cabins would use approximately 30-40 acres of timbered and grassland property. The extension of the campground would use approximately 20-30 acres of mostly open grassland property (see Wildlife Habitat Type for the Proposed Project, Table 1).

Impacts to water quality (surface and ground water) and wildlife (flora and fauna) would depend on the quality of golf course maintenance. Excessive application of fertilizers could result in nutrient loading into the lake and/or nitrate contamination of ground water. The use of insecticides and herbicides could result in either temporary or sustained damage(s) to the terrestrial and aquatic ecosystems within and adjacent to the protected area, depending upon the pesticide product(s) used. Non-point source inputs to the lake and ground water from these applications are moderated by the frequency of use, quantity per application, assimilation by vegetative ground cover, precipitation duration and frequency, soil drainage characteristics, and depth to bedrock. Because the project has been designed to minimize the use of fertilizers, herbicides, and pesticides by reducing the overall area of managed turf, significant cumulative effects from operation of the facility are not anticipated. Also, a Turf Management Plan and Integrated Pest Management program would be used to regulate the amount and types of products used (see golf course design sheets in Appendix B).

Impacts to water quality would depend on the proper operation of the marina. Controlling the fuel and oil processes both at the marina and onshore are of the highest importance. Proper waste disposal and hazardous material handling both by the marina staff and private boaters would be strictly monitored and controlled. The marina would be designed to reduce and control potential pollution sources and mitigate their impacts (see marina environmental features sheet in Appendix B).

The golf course would increase traffic flow to Skiatook Point by 150 to 200 cars per day. Skiatook Point is accessible from the north via county road 1215 (Lake Road) off of State Highway 10 (Figure 1). Skiatook Point is accessible from the east via Rogers Blvd (old SH10) off of State Highway 10 (Figure 1). Skiatook Point is accessible from the south and west via the lake access road via W. 103rd St. from N. 52nd W. Ave and State Highway 11 (Figures 1 and 2). The Bureau of Indian affairs will be extending N. 52nd W. street from W. 103rd St. to 75th St. North to provide better access from the south to the west side of the lake. Construction is slated to begin this summer. Tall Chief Cove Campground and the proposed

Marina are accessible from the lake access road (Figure 1). Skiatook Economic Development Authority (SEDA) is working with the county, state, and federal agencies on improving the lake access road and other roads within the lake area.

The U.S. Army Corps of Engineers is updating the project master plan to reflect changes to the land use allocations for intensive and low-density use. There are approximately 80 acres that may require changing from low density to high density - 20 acres for the marina and 60 acres for the proposed adjacent cabin locations (depending on where the boundaries are drawn). The proposed area for the camping loop, conference center and golf course are already identified as recreation - intensive use and would not require any revision. The approximately 66 acres between the Dam and Tornado Cove would remain low density and available for hiking, nature trails, and other low density uses.

V. MITIGATION PLAN

Mitigation for natural resource losses associated with construction and operation of Skiatook Lake include 5085 acres of Federal land and water at the lake currently managed for fish and wildlife purposes by the ODWC. Construction of the proposed golf course, marina, and village would not constitute a change in the authorized purpose of these leased lands since the project Final Environmental Impact Statement (FEIS) dated 1972 was filed. The lake area would remain a recreational facility. The proposed project would result in additional losses or degradation to the natural or human environment (terrestrial, aquatic, air) addressed in the projected FEIS.

Property in other areas of the lake would be rezoned from intensive use to low density use to mitigate for losses to the areas that have to be rezoned in the area of the marina. Consultation between USACE, USFWS, and ODWC would focus on whether additional mitigation is required to address the loss of identified terrestrial and aquatic habitat due to project construction. Various habitat enhancements such as wetlands and bird nesting sites will be added to the project. Property at Tall Chief Cove not used for construction (the area south and east of the village) is planned for a nature and wildlife area.

No impacts to cultural resources are anticipated; however, should inadvertent discoveries be encountered during construction, all operations in the vicinity of the discovery should cease pending consultation with the Oklahoma State Historic Preservation Office; the Oklahoma State Archeologist; interested Native American tribes, and the Tulsa District, U.S. Army Corps of Engineers Cultural Resource staff.

VI. FEDERAL, STATE, AND LOCAL AGENCY COORDINATION.

This draft Environmental Assessment is being coordinated with the following agencies having legislative and administrative responsibilities for environmental protection.

U.S. Fish and Wildlife Service
Oklahoma Department of Wildlife Conservation
U.S. Natural Resources Conservation Service
Oklahoma Department of Environmental Quality
Oklahoma State Historic Preservation Officer
Oklahoma State Archaeologist
Osage Nation
Quapaw Tribe
Wichita and Affiliated Tribes
Kiowa Tribe
Comanche Tribe
Oklahoma State Conservationist
Oklahoma Department of Tourism
Oklahoma Department of Transportation
Oklahoma Water Resources Board
Oklahoma National Heritage Inventory
City of Skiatook
City of Tulsa
City of Sand Springs
City of Sapulpa
Indian Nations Council of Government

MAILING LIST FOR SKIATOOK LAKE EA

Dr. Bob Brooks
State Archeologist
Oklahoma Archeological Survey
111 E. Chesapeake
Norman, OK 73019

Dr. Bob Blackburn
State Historic Preservation Officer
Oklahoma Historical Society
2704 Villa Prom
Shepherd Mall
Oklahoma City, OK 73107

Mr. Anthony Whitehorn
Cultural Resource Management
Osage Nation of Oklahoma
627 Grandview Ave.
Pawhuska, OK 74056

Ms. Carrie Wilson
Quapaw Tribe of Oklahoma
P.O. Box 765
Quapaw, OK 74363

Mr. Gary McAdams, President
Wichita and Affiliated Tribes of Oklahoma
P.O. Box 729
Anadarko, OK 73005

Comanche Tribal Business Committee
HC 32 Box 1720
Lawton, OK 73502

Mr. Sherman Chaddlestone
Cultural Resource Management
Kiowa Indian Tribe of Oklahoma
P.O. Box 369
Carnegie, OK 73015

Mr. Bobbye Jack Jones
State Conservationists
NRCS
Agriculture Center Office Building
Farm Road and Brumley Street
Stillwater, OK 73074

Ms. Sue Woodward President
Oklahoma Audubon Council
1728 Quaker
Tulsa, Ok 74120

Mr. Mark Coleman Director
ODEQ
1000 N.E. 10th Street
Oklahoma City, OK 73117-1212

Ms. Jane Jayroe
Cabinet Secretary
Oklahoma Department of Tourism
15 North Robinson, Suite 100

Mr. Glen Cheathum
Waterways Branch
Oklahoma Department of Transportation
P.O. Box 660
Tulsa, Ok 73104-0660

Mr. Gregg Duffy, Director
Oklahoma Department of Wildlife Conservation
1801 N. Lincoln
Oklahoma City, OK 73105

Mr. Ron Suttles, Environmental Programs
ODWC
1801 N. Lincoln
Oklahoma City, OK 73105

Ms. Caryn Vaughn, Director
Oklahoma National Heritage Inventory
111 East Chesapeake St.
Norman, OK 73109

Mr. Derek Smithee, Chief
Water Quality Programs Division
OWRB
3800 North Classen Blvd.
Oklahoma City, OK 73118

Mr. Mike Mathis
Oklahoma Water Resources Board
3800 N. Classen Blvd.
Oklahoma City, OK 73118

Mr. Jerry Brabander, Field Supervisor
U.S. Fish and Wildlife Service
222 S. Houston, Suite A
Tulsa, OK 74127

Mayor, City of Skiatook
PO Box 399
Skiatook, OK 74070

Mayor, City of Tulsa
200 Civic Center
Tulsa, OK 74103

Mayor, City of Sand Springs
PO Box 338
Sand Springs, OK 74063

Mayor, City of Sapulpa
PO Box 1130
Sapulpa, OK 74067

Director,
Indian Nations Council of Governments
201 West 5th St. Suite 600
Tulsa, Ok 74103-4236

Ken Taylor
14660 Dior Drive
Skiatook, OK 74030

Darlene Bricker
12345 Wells Drive
Skiatook, OK 74030

John Nelson
P.O. Box 399
Skiatook, OK 74030

Brooks Lord
13550 W. 173rd Street
Skiatook, OK 74070

Scott and Kristie Carlson
5401 Sunset Road
Skiatook, OK 74070

Bob and Lavona Wyckoff
14650 Tiffany Lane
Skiatook, OK 74070

Jim Aeslar
10890 W. Burton Lane
Skiatook, OK 74070

Beverly Taylor
14790 Chanel Lane
Skiatook, OK 74070

Wayne and Betty Barton
601 W. 5th
Skiatook, OK 74070

Shantelle Sutton
11045 W. 112th Place
Skiatook, OK 74070

Roger ?????
14765 Chanel Lane
Skiatook, OK 74070

Kevin Stubbs
15501 N. 95th
Skiatook, OK 74070

Robert Butler
1714 S. Boston
Tulsa, OK 74119

Bob Ryan
303 E. 1st.
Skiatook, OK 74070

Virceiniy Bennett
P. O. Box 98
Skiatook, OK 74020

Sam Avant
P.O. Box 9
Skiatook, OK 74070

Jack Rankin
P.O. Box 96
Skiatook, OK 74070

Sherri Preslar
10807 W. Burton Lane
Skiatook, OK 74070

A.B. Bazoutti
402 E. Oak
Skiatook, OK 74070

Larry Harper
4201 W. Country Road
Skiatook, OK 74070

Dave Truelove
H.C. 67 Box 343
Skiatook, OK 74070

John Nielsen
P.O. Box 399
Skiatook, OK 74070

Omar Bayout
608 Tallchief Court
Skiatook, OK 74070

Cliff Taylor
16120 Windhill Cr.
Skiatook, OK 74070

Mike Myer
1807 S. Broadway
Skiatook, OK 74070

Dan Yancey
P.O. Box 399
Skiatook, OK 74070

Roger Williams
110 E. 136th Street N
Skiatook, OK 74070

Jim and Sharon Burton
P.O. Box 669
Skiatook, OK 74070

Carol Mitchell
14630 Valley View Dr.
Skiatook, OK 74070

Osage Log Hoomes
P.O. Box 119
Skiatook, OK 74070

Richard Barton
Crystal Bay Marina
H.C. 67 Box 3500
Skiatook, OK 74070

Kevin Clough
East Ridge Estates
Homeowners Association
P.O. Box 1055
Owasso, OK 74055

Dr. John Lamberton
Tulsa Environmental Management Programs
700 N. Greenwood Ave.
Tulsa, OK 74106-0700

Robert Breuning
North Star Economic Development Council, Inc.
P.O. Box 654
Skiatook, OK 74070

VII. REFERENCES

Bailey, Robert G., 1995. Description of the Ecoregions of the United States. United States Department of Agriculture, Forest Service, Miscellaneous Publication 1391.

Bersche, G., 1991. Legendary 'Healing Rock" Remains Mystical to Many. Tulsa District Record, U.S.A.C.E., Tulsa District, Tulsa, OK.

Henry, D.O., 1978. The Prehistory and Paleoenvironment of Hominy Creek Valley 1978 Field Season. Laboratory of Archaeology, Department of Anthropology, University of Tulsa. Tulsa, Oklahoma. Prepared for U.S. Army Corps of Engineers (DACW56-77-C-0222) Tulsa, OK.

Jones & Stokes Associates, Inc. 1998. Environmental assessment for golf course, Thompson Peak Parkway, and Desert Greenbelt flood control facilities. Final. January. (JSA 95-334.) Phoenix, AZ. Prepared for U.S. Bureau of Reclamation, Phoenix, AZ.

NRS Consulting Engineers, 1996. Environmental assessment for Kiamichi Park, Hugo Lake. November. Texarkana, AR. Prepared for U.S. Corps of Engineers, Tulsa, OK.

Oklahoma Climatological Survey Website, http://climate.ocs.ou.edu/normals_extremes.html

Perino, G. 1972. An Historical-Cultural Assessment of the Skiatook Reservoir, Osage County, Oklahoma. Prepared for U.S. Army Corps of Engineers (DACW56-72-C-0090), Tulsa OK.

Town of Skiatook Official Website, http://www.skiatook.net

U.S. Army Corps of Engineers, 1972. Environmental Statement Skiatook Lake, Hominy Creek, Oklahoma. Final. February. Tulsa, OK.

U.S. Army Corps of Engineers, 1997. Draft Environmental Assessment, Oklahoma Tourism and Recreation Department, Golf Course Construction, Lake Texoma, State Park, Lake Texoma, Oklahoma-Texas. U.S. Army Corps of Engineers, Tulsa OK.

U.S. Army Corps of Engineers, 1998. Water Quality Report for Skiatook Lake Oklahoma 1994. U.S. Army Corps of Engineers, S.W. Division, Tulsa. District, Tulsa, OK.

U.S. EPA. (1970). 40CFR1500 through 1508 ---National Environmental Protection Act. Washington, DC: U.S. Government Printing Office.

VIII. APPLICABLE ENVIRONMENTAL LAWS AND REGULATIONS

Table 2

RELATIONSHIP OF PLANS TO ENVIRONMENTAL PROTECTION STATUTES AND OTHER ENVIRONMENTAL REQUIREMENTS

Polices	compliance of Alternative
Federal	
Archeological and Historic Preservation Act, 1974, as amended, 16 U.S.C. 469, et seq.	All plans in full compliance
Clean Air Act, as amended, 42 U.S.C. 7609, et seq.	All plans in full compliance
Clean Water Act, 1977, as amended, (Federal Water Pollution Control Act) 33 U.S.C. 1251, et seq.	All plans in full compliance
Endangered Species Act, 1973, as amended, 16 U.S.C. 1531, et seq.	All plans in full compliance
Federal Water Protection Recreation Act, as amended, 16 U.S.C. 661, et seq.	All plans in full compliance
Fish and Wildlife Coordination Act, as amended, 16 U.S.C. 661, et seq.	All plans in full compliance
Land Water Conservation Fund Act, 1965, as amended, 16 U.S.C. 4601, et seq.	All plans in full compliance
National Historic Preservation Act, 1966, as amended, 16U.S.C. 470a, et seq.	All plans in full compliance
National Environmental Policy Act, 1970, as amended, 42 U.S.C. 4321, et seq.	All plans in full compliance
Native American Graves Protection and Repatriation Act, 1990, 25 U.S.C. 3001-13, et seq.	All plans in full compliance
Rivers and Harbors Act, 33 U.S.C. 401, et seq.	Not Applicable
Watershed Protection and Flood Prevention Act, as amended, 16 U.S.C. 1001, et seq.	Not Applicable
Wild and Scenic Rivers Act, as amended,	

16 U.S.C. 1271, et seq.	Not Applicable
Water Resources Planning Act, 1965	Not Applicable
Floodplain Management (E.O. 11988)	All plans in full compliance
Protection of Wetlands (E.O. 11990)	All plans in full compliance
Environmental Justice (E.O. 12898)	All plans in full compliance
Protection of Children (E.O. 13045)	All plans in full compliance
Farmland Protection Act, 7 U.S.C. 4201, et seq.	All plans in full compliance

Note: Full compliance-Having met all requirements of the statues, Executive Orders, or other environmental requirements for the current stage of planning.

IX. LIST OF PREPARERS

U.S. ARMY CORPS OF ENGINEERS

Louis Vogele	Archeologist
Preston Hunter	Skiatook Lake Manager
Greg Bersche	Skiatook Lake Park Ranger

PLANNING DESIGN GROUP

Jim Crosby	Landscape Architect

HECKENKEMPER GOLF COURSE DESIGN

Randy Heckenkemper	Golf Course Designer

ALEXANDER CONSULTING INC.

Tom J. Alexander, PhD, PG	Principal-in-Charge

OKLAHOMA STATE UNIVERITY-TULSA

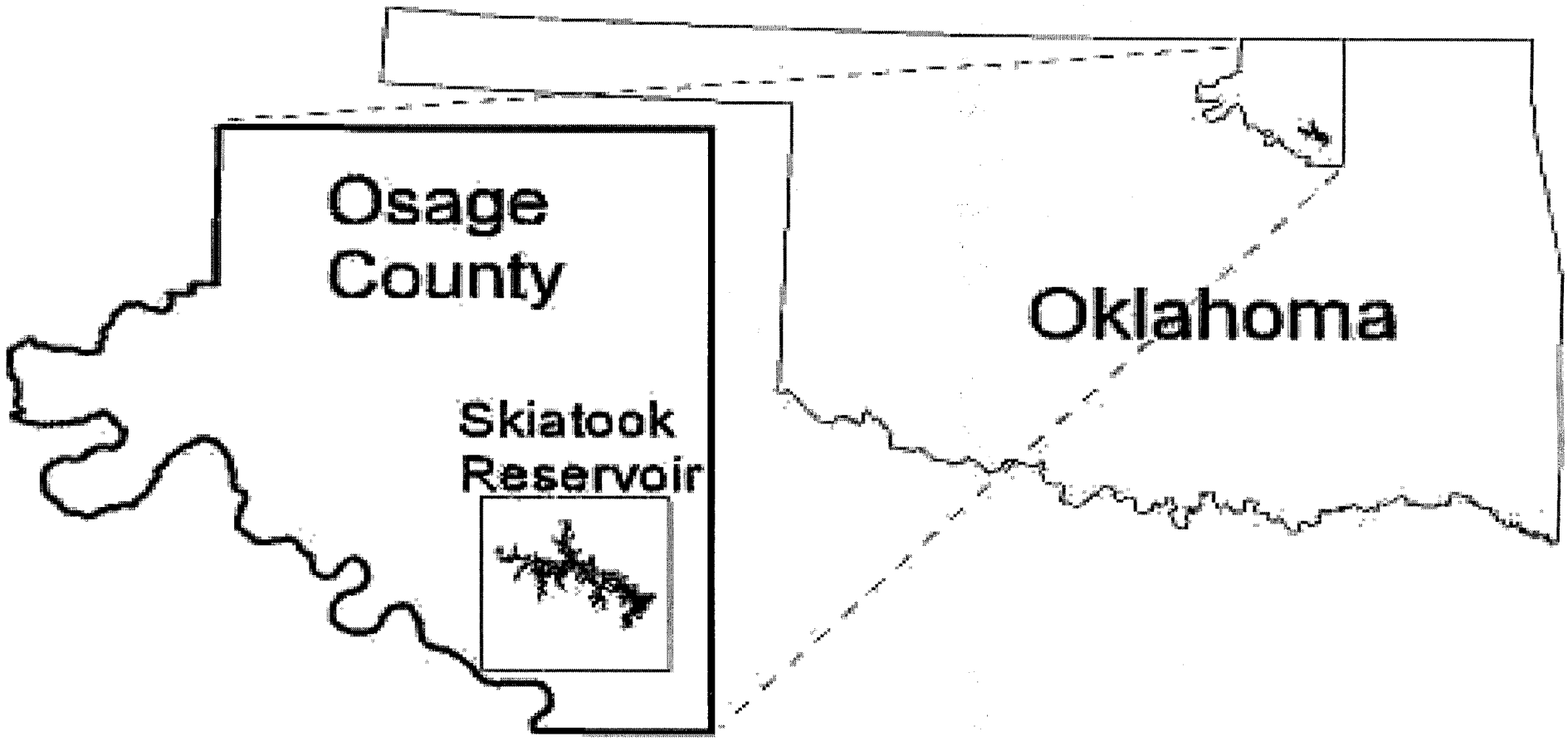
Matt Albright, MS	Environmental Specialist

UNIVERSITY OF TULSA

Donald O. Henry, PhD	Archaeologist

OSAGE COUNTY

Scott Hilton	Commissioner



Skiatook Area Location Map

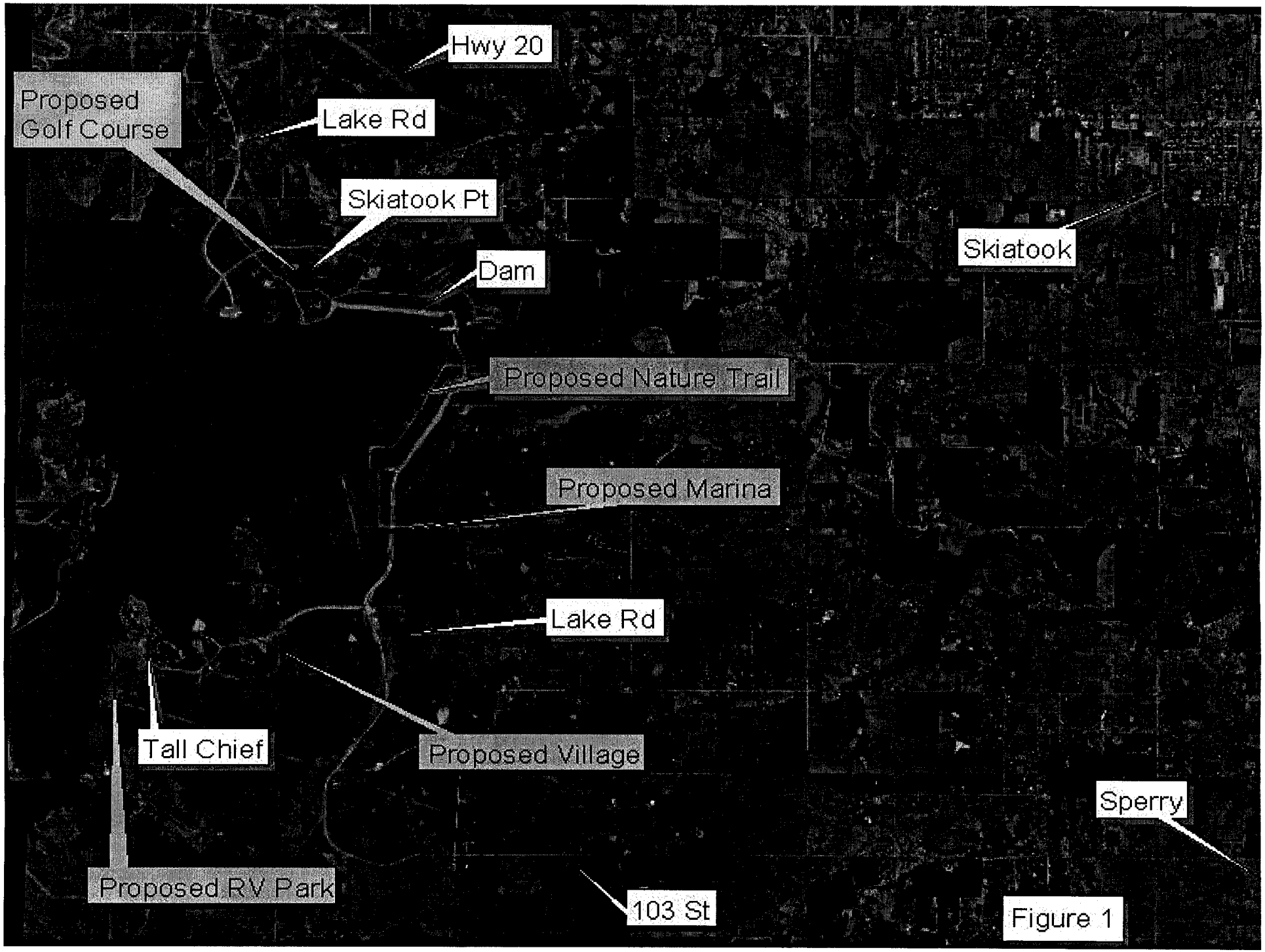

Hwy 20
Proposed Golf Course
Lake Rd
Skiatook Pt
Dam
Skiatook
Proposed Nature Trail
Proposed Marina
Lake Rd
Tall Chief
Proposed Village
Sperry
Proposed RV Park
103 St

Figure 1

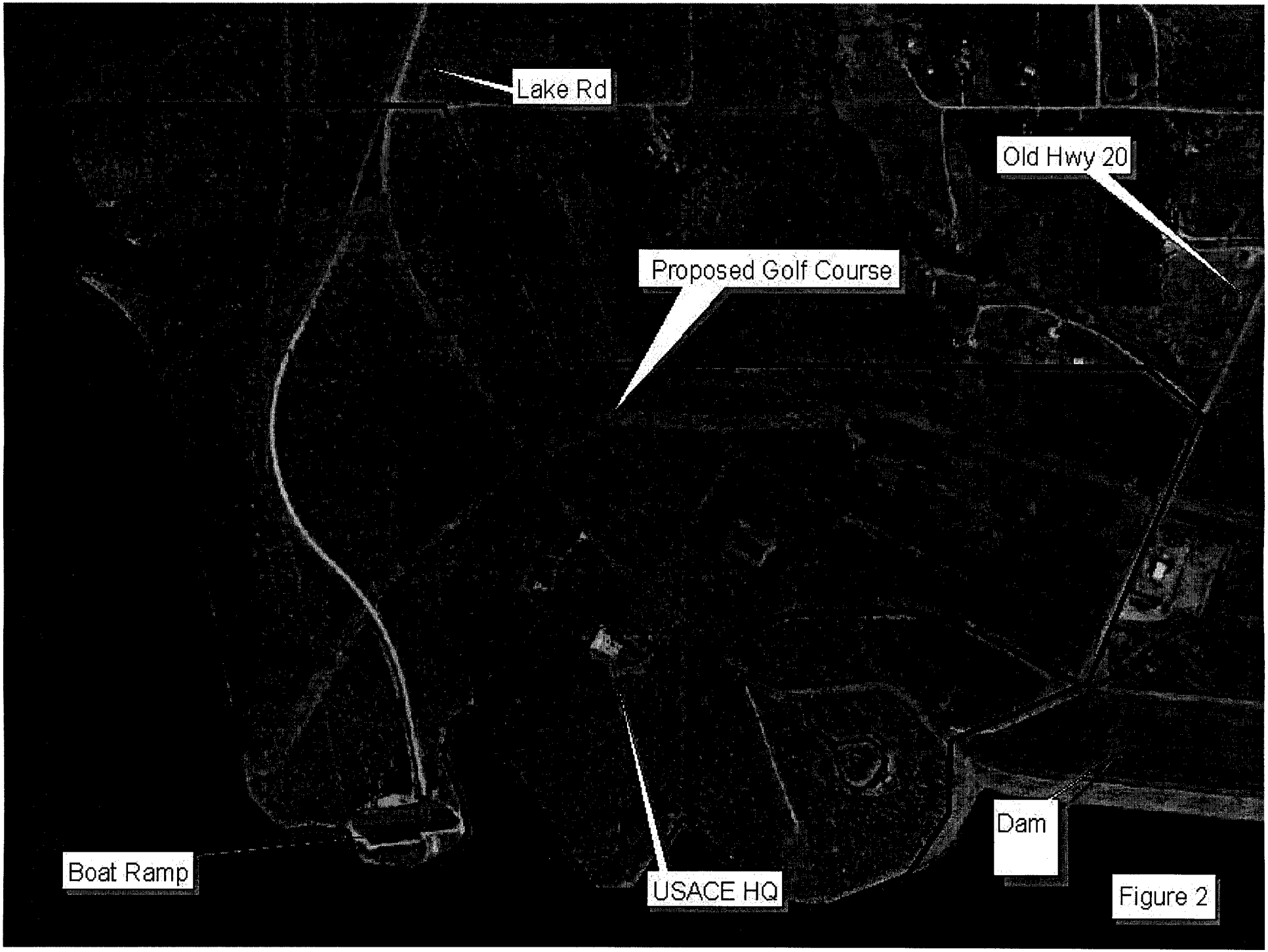

Lake Rd
Old Hwy 20
Proposed Golf Course
Dam
Boat Ramp
USACE HQ

Figure 2

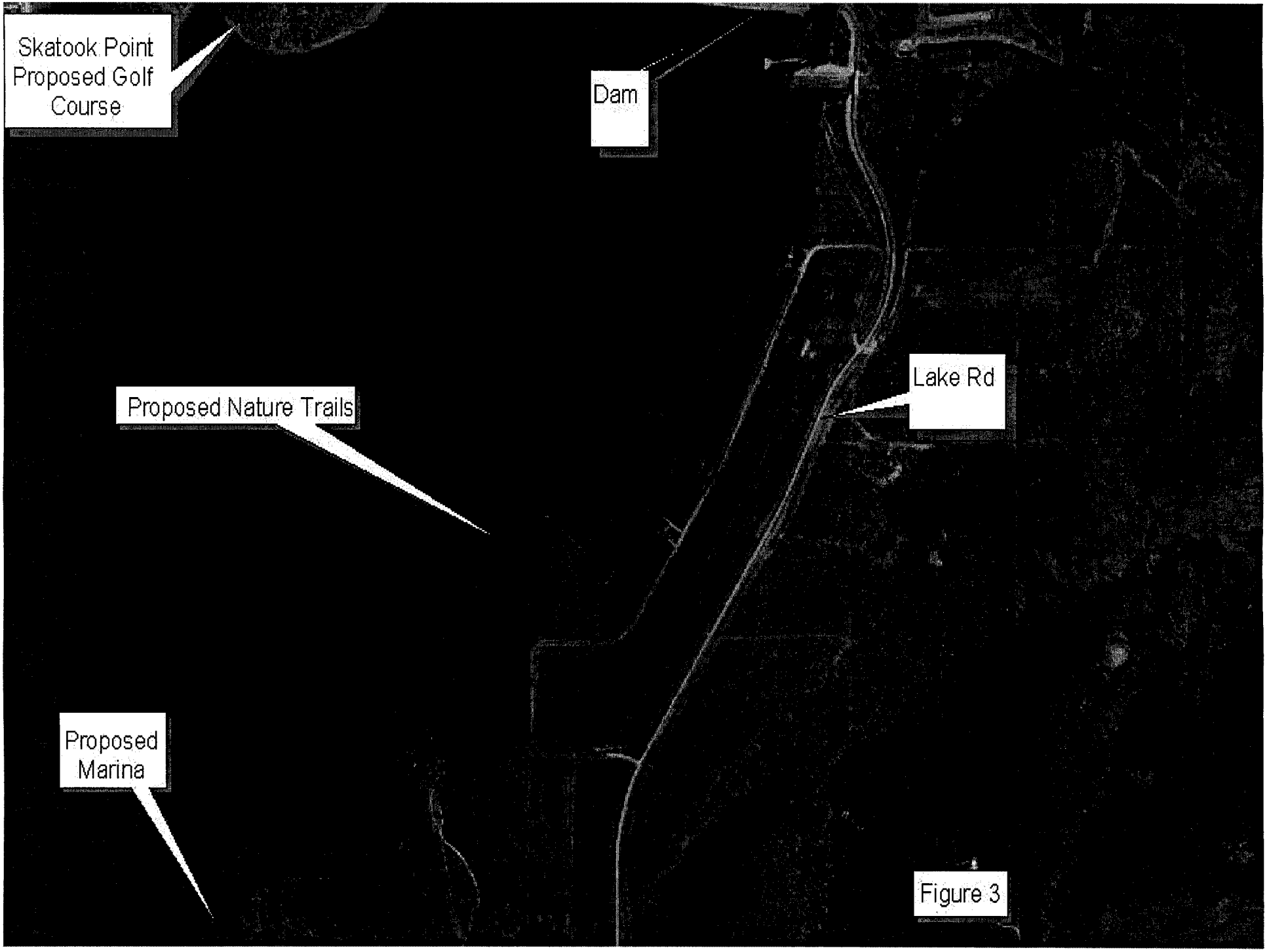

Skatook Point Proposed Golf Course
Dam
Lake Rd
Proposed Nature Trails
Proposed Marina

Figure 3

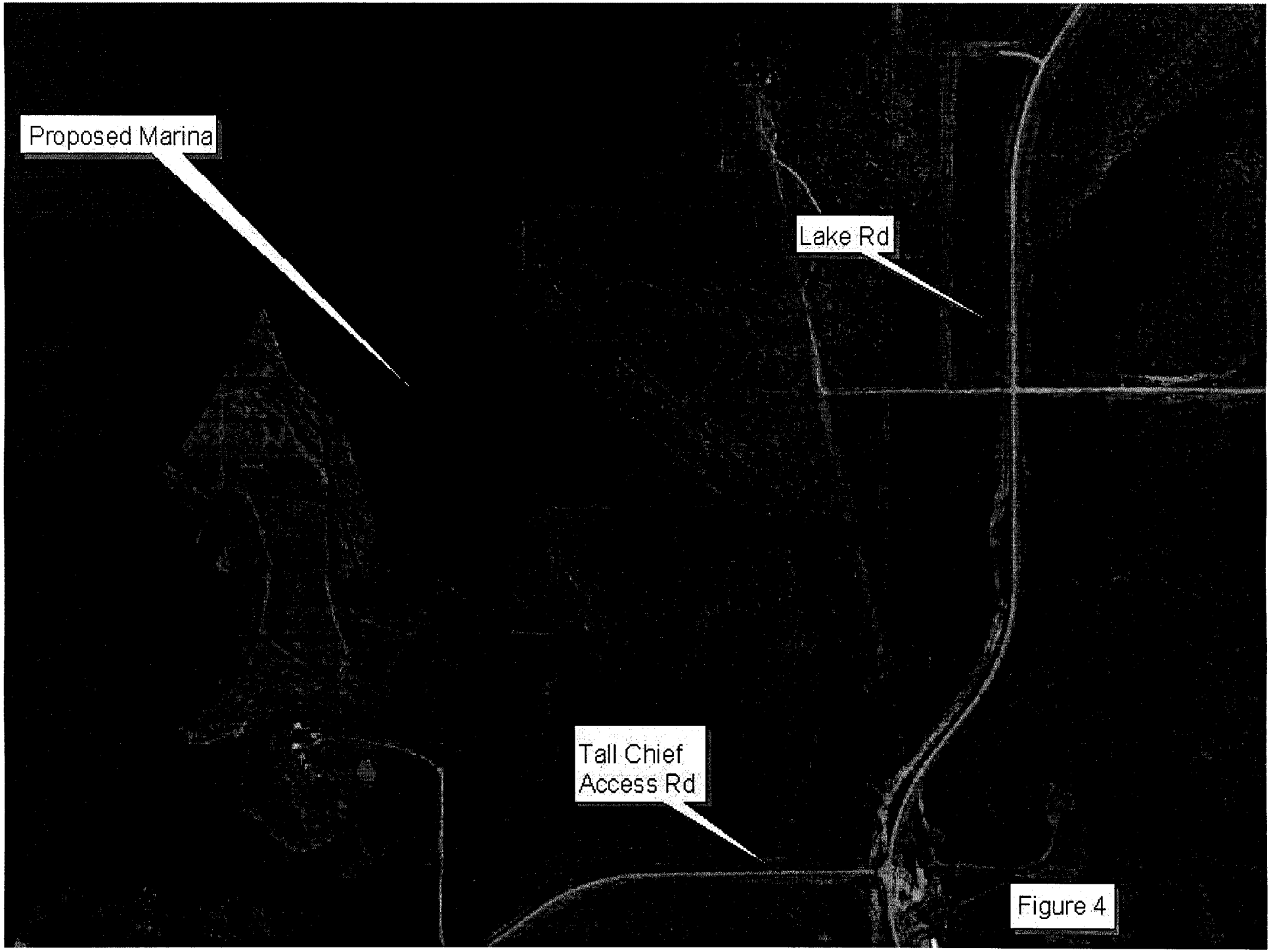


Figure 4

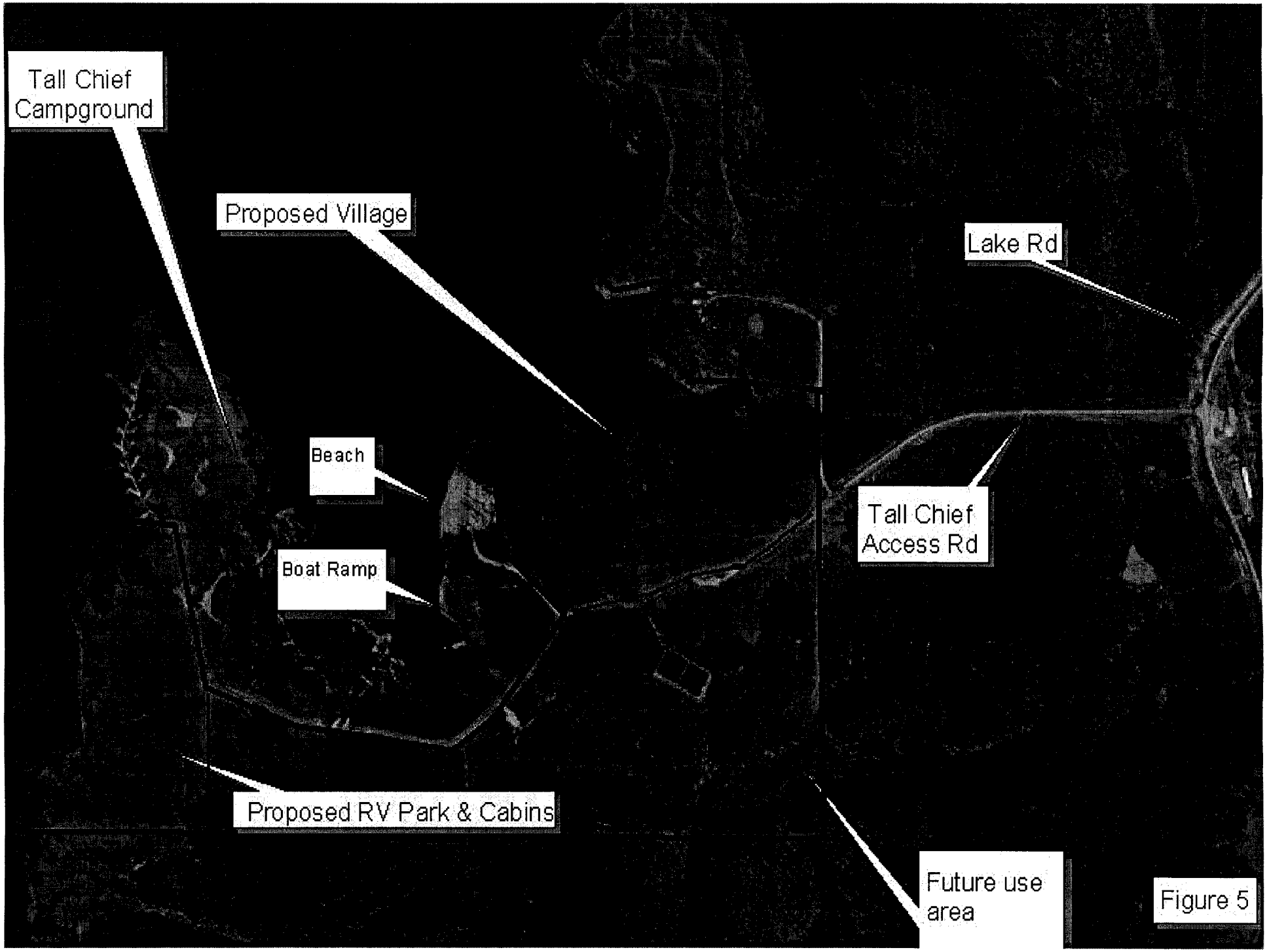

Tall Chief Campground
Proposed Village
Lake Rd
Beach
Boat Ramp
Tall Chief Access Rd
Proposed RV Park & Cabins
Future use area

Figure 5